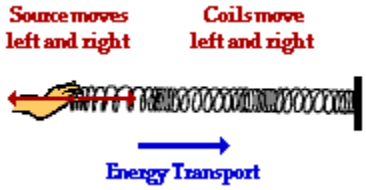
Activity #2



Title: An Investigation into Longitudinal (Compressional) Waves –STUDENT'S RESPONSE SHEET

1. When the hand holding one end of the spring is snapped TOWARDS the opposite end, it produces a region in the spring where the coils are spaced _____ (**further apart than normal, closer together than normal**).
2. When the hand holding one end of the spring is snapped AWAY from the other end, it creates a region in the spring where the coils are spaced _____
_____.
3. In the box below, diagram the waves you have created in this step and label the two components of the wave (compressions/rarefactions) appropriately.

4. When producing about two waves per second, the length of one wave (wavelength) is about ____ cm.
5. When producing about four waves per second, the length of one wave (wavelength) is about ____ cm.
6. As the frequency of a compressional wave increases, the wavelength _____ (**increase, decreases, remains about the same**.)

7a. By observing the string attached to one coil of the spring, I can see that the coil to which it is attached moves _____(**perpendicularly, parallel to**) the direction that the wave is traveling.

7b. The actual coils of the spring _____ (are/are not) moving from one end of the spring to the other as the wave travels down the spring?

7c. If this was a longitudinal sound wave moving away from a sound source, the actual molecules of air _____ (**would/would not**) be traveling though the air at the speed of sound?

8. Some similarities between the production of a transverse wave (from Activity #1) and a longitudinal wave are _____
_____
_____.

9. At least one difference between a transverse and compressional wave is (are) _____
_____
_____
_____.